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(71) Applicant (for all designated States except US):  
MONASH UNIVERSITY [AU/AU]; Clayton Road,  
Clayton, Victoria 3168 (AU).

(72) Inventor; and

(75) Inventor/Applicant (for US only): NIKULIN, Andrei  
[AU/AU]; 40 Torwood Avenue, Glen Waverley, Victoria  
3150 (AU).

(74) Agent: PHILLIPS ORMONDE & FITZPATRICK; 367  
Collins Street, Melbourne, Victoria 3000 (AU).

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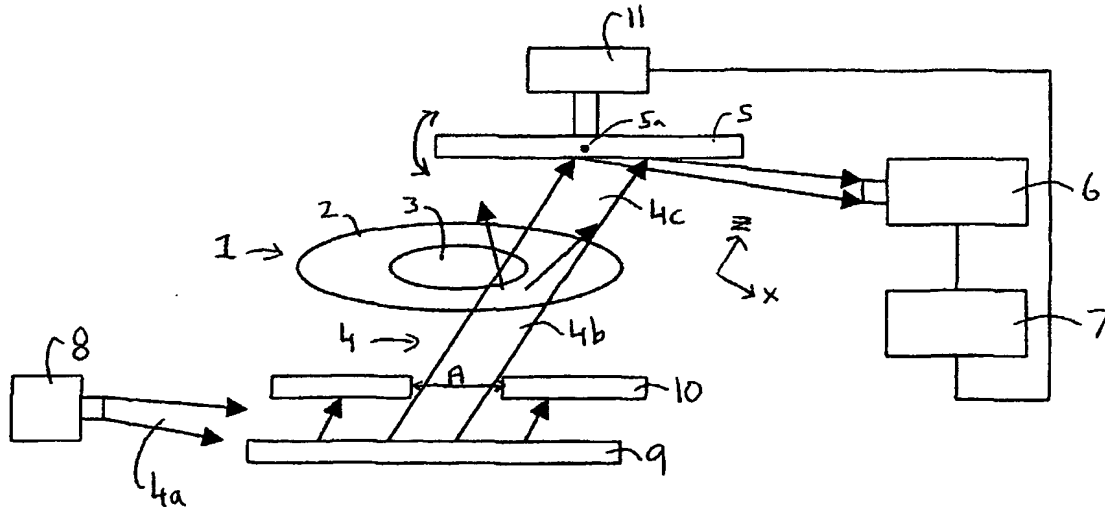
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(54) Title: METHODS AND APPARATUS OF SAMPLE ANALYSIS



(57) Abstract: An x-ray beam (4) from a rotating anode source (8) is passed through an object (1) via a monochromator (9) and slit member (10) in order to determine the object's internal structure. The emerging radiation that is within the acceptance angle of a crystal analyser (5) is diffracted onto a PIN diode detector (6), which records an intensity profile of the radiation detected as a function of angular position of the crystal analyser (5). The resulting profile is analysed to provide a complex refractive index profile for the object (1) across the width of the beam (4). The analysis method and apparatus utilises both absorption and refraction information, and can provide both qualitative and quantitative information on the object's structure, with the dimensions of the slit member (10) providing an analytical intensity profile.